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The Truck and Its Relationship to Livestock Marketing in Ohio

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THE TRUCK AND ITS RELATIONSHIP TO LIVESTOCK MARKETING IN OHIO

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Trucking has become an important factor in transportation since the World War, especially for the short haul. This change has influenced the marketing of agricultural products, especially livestock, from the farms of Ohio. Some of the influences affecting livestock marketing are set forth in this bulletin as an aid to those who are interested in analyzing economic livestock marketing.

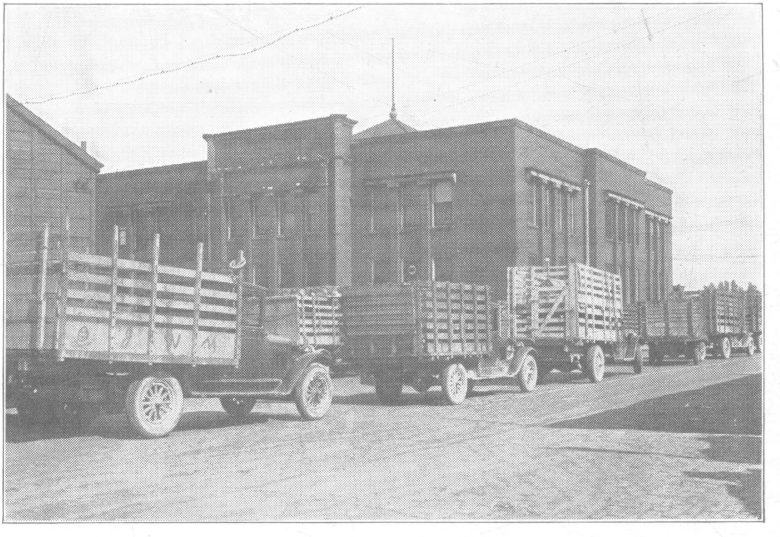

Fig. 1.—Trucking livestock to market has become an important factor in transportation

Livestock trucking, as it is done in Ohio, involves the livestock producer who, when so situated, may truck his livestock from the farm to the terminal market; second, who may truck it to a packer or local slaughterer; and, third, who may truck to local railroad shipping points or concentration yards. Some livestock producers, who are so located, can truck to all of these points of disposal, others to only two, and still others to only one.

The data on terminal livestock trucking were more satisfactory than those on the other types of trucking. The terminal

stockyards at Cleveland and Cincinnati have kept records on the truck-delivered livestock for a number of years. These records are accurate, readily available, and were the chief source of data for this bulletin.

The information available on trucking, other than to terminal stockyards, was rather meager and fragmentary. This was due primarily to incomplete records kept by most of the agencies and to the individualistic manner in which livestock trucking was conducted. Further, there was nearly always the thought present among truckers that the information desired might be used against them in their relations with the Ohio Public Utilities Commission.[1] Therefore, some of the data desired were not readily obtained.

In order to secure information on livestock trucking to slaughterers, railroad shipping points, and concentration yards, questionnaires were mailed to 1,000 farmers in 70 townships of 10 counties in southwestern Ohio. This area was selected because it included all types of trucking and is an important livestock producing section of the State.

These 70 townships were selected so that 23 were in Preble, Montgomery, Warren, Clinton, and Highland Counties, an area that normally trucks livestock to the Cincinnati market. The remaining 47 townships were located in Clark, Greene, Clinton, Highland, Madison, Fayette, and Pickaway Counties, an area that normally trucks to concentration yards or to local slaughterers.

The names of the farmers were secured thru the assistance of the county agents. The farmers returned 398 of the questionnaires. Altho some of the schedules had to be discarded because of inadequate reports, those remaining were believed to be representative of the livestock trucking situation in the area. This was the second important source of data.

The third source of data was the county agents or managers of livestock marketing agencies in most of the important livestock producing counties in Ohio. This information pertained to livestock trucking within their respective counties.

The Bureau of Agricultural Economics, United States Department of Agriculture furnished the truck receipts at Buffalo, Chicago, East St. Louis, Indianapolis, and Pittsburgh. Information on roads was furnished by the Highway Department of Ohio, and truck registration by the Commissioner of Motor Vehicles of Ohio.

[1]The Public Utilities Commission requires all truckers hauling for the public to file an annual report and pay a considerable sum for an annual license to operate.

The foregoing data were supplemented by personal interviews by the author during several years of research in livestock marketing in the important livestock counties in the State.

THE AMOUNT OF LIVESTOCK TRUCKED

Livestock trucking has increased greatly in recent years. It is now, 1929, the chief means of transporting livestock to all markets and slaughterers. More Ohio livestock has been trucked to Cleveland and Cincinnati than to any other points.

Trucking to the Cleveland market has shown its greatest increase during the last five years, Table 1. Truck receipts of cattle increased from 9,298 head in 1923 to 27,038 in 1928, calves from 19,556 to 39,327, hogs from 27,766 to 96,939, and of sheep from 41,944 to 88,005. The number of each species received by truck more than doubled in five years. More hogs and sheep were trucked than calves and cattle; but when the comparison is made in terms of the percentage trucked of total receipts, larger percentages of cattle and calves were trucked than of either hogs or sheep. For the year 1928, truck deliveries at Cleveland were 28 percent of the cattle receipts, 34.6 percent of the calves, 12.9 percent of the hogs, and 21.1 percent of the sheep. A very small percentage of the total receipts was so transported in 1920. Data on truck receipts at Cleveland prior to 1919 were not available.

The truck situation at Cincinnati was different in some respects from that at Cleveland. The number of hogs and sheep delivered by truck increased from year to year with few exceptions. This was not true to such an extent for cattle and calves. During the years from 1917 to 1928 the truck receipts of cattle were nearly stationary. The same was true for the number of calves delivered by truck for the years 1919 to 1928.

During the year 1928 truck receipts of cattle, calves, hogs, and sheep all showed a considerable increase over 1927. More hogs and sheep than cattle and calves were delivered by truck at Cincinnati.

Cincinnati has had a large delivery of livestock by truck. Even back before the truck was developed as at present the delivery by wagon was fairly large; in 1910 there were 20,367 cattle, 28,689 hogs, 21,195 calves, and 11,790 sheep so delivered.

The percentages delivered by truck of total receipts for hogs and sheep have been steadily increasing, but for calves and cattle truck receipts continued about the same until 1928, when the percentages of truck receipts of calves, cattle, and sheep increased

TABLE 1.—The Total Receipts of Livestock and the Number and Percentage Received by Truck at Cleveland From 1919 to 1928 and at Cincinnati From 1916 to 1928

Year	Total receipts				Received by truck							
	Cattle	Calves	Hogs	Sheep	Cattle	Calves	Hogs	Sheep	Cattle	Calves	Hogs	Sheep
	No.	No.	No.	No.	No.	No.	No.	No.	Pct.	Pct.	Pct.	Pct.
Cleveland												
1919	130,784	131,944	907,535	314,358	3,599	7,668	18,441	10,190	2.75	5.81	2.03	3.24
1920	115,952	131,772	866,387	270,244	5,090	12,486	24,827	14,963	4.38	9.47	2.86	5.53
1921	114,011	129,819	941,384	352,625	3,794	11,640	20,374	17,266	3.32	8.96	2.16	4.89
1922	131,927	141,879	1,063,427	344,722	6,460	13,013	27,023	25,279	4.89	9.17	2.54	7.33
1923	126,140	146,321	1,159,791	318,324	9,298	19,556	27,766	41,944	7.37	13.36	2.39	13.17
1924	130,943	145,073	1,261,340	355,972	9,780	15,814	31,354	44,100	7.46	10.90	2.48	12.38
1925	129,947	156,608	776,620	408,485	11,591	18,741	32,377	49,934	8.91	11.96	4.16	12.22
1926	114,937	140,886	693,566	385,533	15,860	21,836	51,803	66,680	13.79	15.49	7.46	17.29
1927	104,892	123,295	754,777	435,836	19,395	27,406	78,885	83,389	18.49	22.23	10.45	19.13
1928	96,514	113,679	749,186	415,958	27,038	39,327	96,939	88,005	28.04	34.59	12.93	21.15
Cincinnati												
1916	279,710	72,330	1,260,000	332,000	21,042	22,283	44,923	10,035	7.52	30.80	3.56	3.02
1917	357,133	95,709	1,239,000	270,000	27,221	28,355	77,202	23,628	7.62	29.62	6.23	8.75
1918	356,436	98,855	1,463,000	275,000	28,691	31,668	139,972	30,818	8.05	32.03	9.56	11.20
1919	326,000	134,487	1,674,000	335,000	30,660	52,296	229,922	50,077	9.40	38.88	13.73	14.94
1920	280,889	160,155	1,478,000	366,000	27,127	68,175	249,256	62,361	9.66	42.56	16.86	17.03
1921	288,773	165,201	1,435,000	438,000	22,839	55,332	276,023	64,637	7.91	33.49	19.23	14.75
1922	282,742	162,812	1,347,000	394,000	28,619	59,526	288,126	64,446	10.12	36.56	21.39	16.35
1923	262,070	163,568	1,401,000	345,000	27,115	60,711	303,980	53,678	10.34	37.11	21.69	15.55
1924	267,957	174,312	1,365,008	327,303	28,402	55,829	287,906	55,151	10.60	32.02	21.09	16.85
1925	260,245	171,518	1,040,415	369,805	29,863	56,522	239,109	60,317	11.47	32.95	22.98	16.31
1926	248,901	163,915	1,047,101	329,380	31,484	55,103	280,429	62,632	12.65	33.61	26.78	19.01
1927	250,566	152,745	1,253,083	319,387	33,713	52,155	367,727	83,359	13.45	34.14	29.34	26.09
1928	231,289	133,734	1,567,309	210,839	42,636	62,020	471,266	94,009	18.43	46.37	30.06	44.58

greatly. Hogs increased only from 29 percent in 1927 to 30.1 percent in 1928, while sheep and lambs showed the biggest gain, from 26.1 percent in 1927 to 44.6 percent in 1928.

Cincinnati was getting a greater percentage of total receipts by truck than Cleveland of calves, hogs, and sheep, but a smaller percentage of cattle. With the rather definite increase in trucking at Cincinnati during 1928, it seems that the ultimate trucking area may not have been reached.

TABLE 2.—The Percentage of Livestock Received by Truck at Seven Markets*

	Buffalo	Chicago	E. St. Louis	Indianapolis	Pittsburgh	Cleveland	Cincinnati
Cattle							
1916		0.10					7.52
1917		.11					7.62
1918		.09					8.05
1919		.15		13.40		2.75	9.40
1920		.24	1.19	13.74	0.58	4.38	9.66
1921		.25	1.23	15.66	.44	3.32	7.91
1922		.40	1.11	17.01	.48	4.89	10.12
1923		.50	.98	18.72	.62	7.37	10.34
1924	4.31	.63	.96	16.01	.65	7.46	10.60
1925	4.91	1.17	1.62	20.35	.88	8.91	11.47
1926	4.39	1.59	2.79	22.65	1.27	13.79	12.65
1927	4.25	1.92	3.71	26.82	1.58	18.49	13.45
1928	10.93	2.83	7.50	33.90	2.65	28.04	18.43
Calves							
1916		.17					30.80
1917		.35					29.62
1918		.33					32.03
1919		.36		39.60		5.81	38.88
1920		.27	3.61	31.08	.86	9.47	42.56
1921		.34	2.97	38.79	.87	8.96	33.49
1922		.48	3.05	36.45	.85	9.17	36.56
1923		.58	2.65	36.35	.43	13.36	37.11
1924		.49	3.28	33.92	.71	10.90	32.02
1925		.75	5.86	36.14	1.16	11.96	32.95
1926		1.00	7.63	38.18	1.49	15.49	33.61
1927		1.50	10.35	45.81	1.44	22.23	34.14
1928		3.09	18.31	52.82	2.96	34.59	46.37
Hogs							
1916		.04	.23	6.72			3.56
1917		.05	.29	11.56			6.23
1918		.10	.36	16.81			9.56
1919		.32	1.74	24.22	.13	2.03	13.73
1920		.43	1.39	27.17	.13	2.86	16.86
1921		.62	.80	29.98	.09	2.16	19.23
1922		.63	1.06	32.38	.06	2.54	21.39
1923		.59	1.51	32.50	.04	2.39	21.69
1924	1.05	.51	2.01	32.21	.04	2.48	21.09
1925	1.62	.85	2.58	37.19	.07	4.16	22.98
1926	1.64	1.30	6.51	42.08	.13	7.46	26.78
1927	2.05	1.91	6.13	47.84	.23	10.45	29.34
1928	3.14	3.57	12.00	53.25	.29	12.93	30.06
Sheep							
1916		.006	.18				3.02
1917		.017	.47				8.75
1918		.028	.51				11.20
1919		.032	1.27	44.77	.22	3.24	14.94
1920		.065	.91	43.16	.41	5.53	17.03
1921		.076	1.51	47.03	.15	4.89	14.75
1922		.16	3.23	42.73	.27	7.33	16.35
1923		.15	2.87	46.00	.25	13.17	15.55
1924	1.68	.23	3.39	47.59	.43	12.38	16.85
1925	2.53	.41	5.46	45.94	.66	12.22	16.31
1926	3.01	.48	7.41	37.58	.78	17.29	19.01
1927	3.91	1.02	11.43	50.23	1.01	19.13	26.09
1928	5.26	1.61	18.09	53.28	1.18	21.15	44.58

*The data, except Cleveland and Cincinnati, were received from the Bureau of Agricultural Economics, U. S. Department of Agriculture.

On the other hand the number and percentage of cattle and calves delivered by truck remained fairly constant for the four years preceding 1928. This would indicate a lessened possibility for continued increase. The percentage of hogs received by truck during 1927 and 1928 also seems to indicate the same tendency.

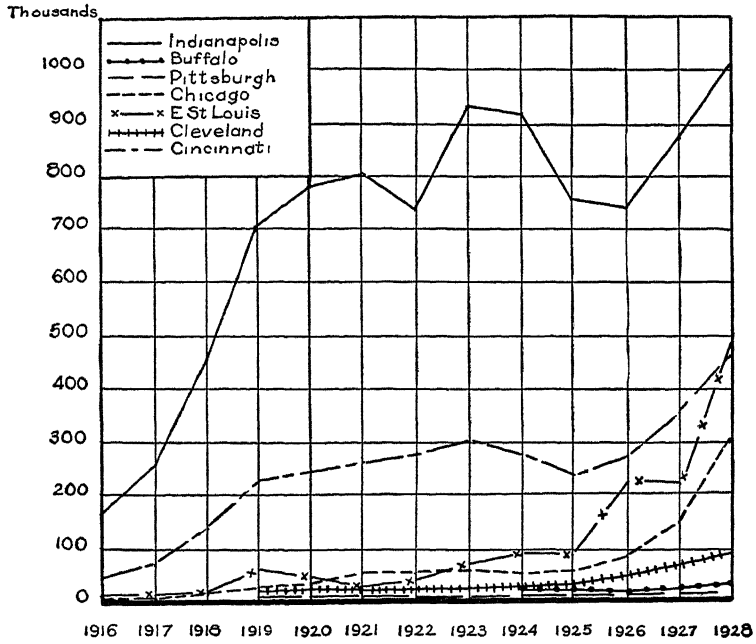

Fig. 2.—The number of hogs received by truck at seven markets, Table 24

The percentage of livestock received by truck at five other markets, namely, Buffalo, Chicago, East St. Louis, Indianapolis, and Pittsburgh is given in Table 2. These markets, like Cleveland and Cincinnati, have shown an increase in truck receipts. The greatest growth here has also been in the last few years. Of these markets Indianapolis received by truck the greatest percentage of cattle, calves, hogs, and sheep. When numbers of animals are considered, Indianapolis again ranked first and Pittsburgh last in percentage of the livestock trucked to these markets, Figures 2 and 3.

Each of these terminal markets showed an increase in the percentage of receipts by truck for the year 1928 over previous years. This was true for all species of livestock. The percentage received by truck at Chicago was very low. This, of course, was due to the

large area from which rail receipts come, making it the largest terminal market in the United States. In numbers, Chicago ranked with the large truck markets.

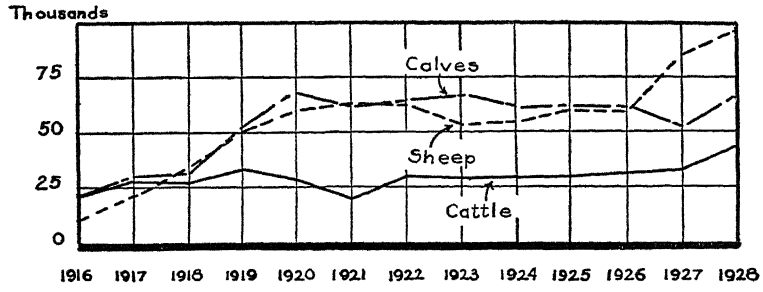

Fig. 3.—The number of cattle, calves, and sheep received at Cincinnati from 1926 to 1928. The variations from year to year on other markets were similar to those of Cincinnati, Table 22, 23, and 25.

LIVESTOCK TRUCKING IN SOUTHWESTERN OHIO

Questionnaires were sent to a number of farmers in southwestern Ohio, as previously described, to obtain more information on livestock trucking from the farm than was available at the terminal markets. The amount of livestock trucked by this group is presented in Table 3.

TABLE 3.—The Amount of Livestock Sold and Trucked From the Farms of a Group of Farmers in Seventy Townships in Southwestern Ohio for the Year 1927

	Cattle	Calves	Hogs	Sheep
Total number sold				
From area trucking normally to Cincinnati	630	461	10,176	1,047
From area trucking normally to other points	1,800	798	21,343	2,896
Total	2,430	1,259	31,519	3,943
Number trucked				
From area trucking normally to Cincinnati	425	391	9,796	962
From area trucking normally to other points	811	717	19,694	2,222
Total	1,236	1,108	29,490	3,184
Percentage trucked				
From area trucking normally to Cincinnati	67.5	84.8	96.2	87.6
From area trucking normally to other points	45.1	89.8	92.2	76.7
Average (weighted)	50.8	88.0	93.8	80.8

The farmers returning the schedules, trucked a large percentage of their livestock from their farms to local shipping points or direct to packers in Cincinnati and Dayton markets or to nearby buyers.[2] A larger percentage of hogs was trucked from these farms than of any other species, and a smaller percentage of cattle.

[2]Some livestock was driven, particularly the cattle, and some was hauled in wagons.

TABLE 4.—The Mileage of Different Types of Roads for Northeastern and Southwestern Ohio and the Entire State on January 1, 1921 and January 1, 1929*

	Northeastern Ohio (15 counties)			Southwestern Ohio (11 counties)			State		
	1921	1929	Increase	1921	1929	Increase	1921	1929	Increase
Earth	10,568	8,149	—23.0	2,985	2,395	—19.8	49,633	38,608	—22.2
Traffic-bound macadam	449	2,115	472.0	5,574	6,042	8.4	25,607	29,965	17.0
Brick, concrete, macadam, etc.	2,436	3,269	34.1	1,179	1,582	134.2	9,257	16,404	77.2
Total	13,453	13,533	.6	9,738	10,019	2.9	84,497	84,977	.6
Earth roads, percent	78.6	60.2	....	30.6	23.9	... .	58.7	45.4	....

*Source of data—Department of Highways, State of Ohio.

These tables indicate that trucking increased greatly during the last few years, not only in moving livestock from the farm but also in transporting it to the terminal market. The area in southwestern Ohio, which is an important livestock section of the State, indicates that farmers at the time of this study were depending principally on the truck to market livestock from their farms, even tho it may have been transported to a railroad shipping point and then shipped by rail.

LIVESTOCK TRUCKING AND GOOD ROADS

In the preceding pages the development and growth in livestock trucking has been set forth. The relation of trucking and good roads should also be considered. Even tho trucks can be driven over most roads, whether improved or earth, during late spring, summer, and early autumn, their operation is inconvenienced during rainy and bad weather. In winter and early spring when road beds soften trucking must be confined to solid roads, which will stand traffic thruout the entire year.

The change taking place in the better road mileage and the earth road mileage of Ohio is indicated in Table 4. The area around Cleveland (15 counties) and that around Cincinnati (11 counties) are compared with the total for the State. The significant fact which is brought out in this table is the decrease in the mileage of earth roads and the increase in improved roads during the last eight years. During this period the improved road mileage increased 11,500 miles, which decreased the earth road mileage 22.2 percent.

In the Cleveland area the earth road mileage, which has been considerably greater than in southwestern Ohio, constituted 78.6 percent of all roads January 1, 1921 and 60.2 percent January 1, 1929; while for southwestern Ohio for the same dates, the earth road mileage was 30.6 percent and 23.9 percent.

No doubt the large mileage of earth roads has been a retarding factor to the amount of livestock trucked.

The 1925 census shows, Table 5, that 38 percent of the farmers of the State were still living along earth roads—in the Cleveland area, 48.6 percent and in the Cincinnati area, 17 percent. This shows that southwestern Ohio had a better road outlet than northeastern Ohio and, hence, farmers of that area could utilize the truck to a greater degree than could those located within the Cleveland area. Further, nearly 60 percent of the farmers of southwestern Ohio were living along gravel roads.

TABLE 5.—The Number and Percentage of Farms Located Along Improved and Unimproved Roads for Northeastern and Southwestern Ohio and the State as Given in 1925 Census

	Concrete and brick	Macadam	Gravel	Improved dirt	Unimproved dirt	All other roads	Total number
Number							
Northeastern Ohio (15 counties)	9,120	8,176	2,421	2 211	20,036	3,866	45,830
Southwestern Ohio (11 counties).....	1,074	5,517	18,099	1,688	3,441	432	30,251
State	17,954	55,307	66,647	16,408	77,463	10,924	244,703
Percentage							
Northeastern Ohio (15 counties).....	19.9	17.8	5.3	4.9	43.7	8.4	100
Southwestern Ohio (11 counties).....	3.6	18.2	59.8	5.6	11.4	1.4	100
State	7.3	22.6	27.2	6.7	31.7	4.5	100

During the period since 1920 the number of truck registrations rapidly increased, as is shown in Table 6. For the entire State the number increased 24.6 percent. In the areas about Cleveland and Cincinnati the number has shown a corresponding increase. However, when the counties in which Cleveland and Cincinnati are located were omitted the percentage of increase has been more rapid, 67.2 percent and 27.3 percent, respectively.

TABLE 6.—Truck Registration for Northeastern and Southwestern Ohio and the Entire State for the Years 1920, 1924, and 1928*

	1920	1924	1928	Increase 1928 over 1920
	No.	*No.*	*No.*	*No.*
Northeastern Ohio (15 counties).....	32,135	58,113	69,439	216
Northeastern Ohio, excluding Cuyahoga County.....	6,086	32,841	40,919	672
Southwestern Ohio (11 counties)	14,351	28,151	35,211	245
Southwestern Ohio, excluding Hamilton County..... ...	6,858	14,616	18,774	273
Total for State.....	80,787	159,512	198,705	246

*Source—Commissioner of Motor Vehicles, State of Ohio.

The figures include all truck registrations for both city and country. While relatively few trucks haul livestock, the increased number of trucks which have been purchased indicates that more and more products have been trucked.

AGENCIES TRUCKING LIVESTOCK

With this increased number of trucks operating in Ohio, many have turned to livestock trucking as the chief source of income. At the time of this study two groups, the livestock trucker and the farmer himself, trucked the major part of the livestock.

In 37 counties furnishing information, 40 percent of the trucking was done by farmers, 47.7 percent by commercial truckers and 12.3 percent by the other groups.

In many communities farmers have purchased trucks, and do hauling not only for themselves but for their neighbors as well. Some of the increase in truck registration has been due to the purchase of trucks by farmers to use for hauling agricultural products.

Livestock was trucked not only by truckers and farmers but also by livestock buyers, small local killers, and some cooperative associations. Several local killers over the State when purchasing livestock direct from the farms have trucked it to their establishments. This has appealed to farmers. In addition some livestock buyers have been trucking the livestock when purchased at the farm to stockyards or to slaughterers. This was particularly noticeable in the Cleveland area. Instead of the farmer consigning his livestock to a commission firm and receiving what the livestock sold for, less marketing expense, he often sold to truck buyers, who, in many instances, netted substantial sums for their efforts.

Another condition concerning livestock trucking was observed. The Ohio law requires all truck owners hauling for the public to have a public utilities commission (P. U. C. O.) license. This is expensive and rather than comply with the law many truck owners have all livestock sold in their own name. After the livestock has been sold the trucker issues a check to the farmer for the amount less the trucking and terminal expenses.

During the last few years livestock has also been trucked by organizations operated by the farmers themselves. This development started in northeastern Ohio. These cooperatives concluded that they should own the trucks and furnish trucking service to farmers in their respective communities. Huron County Service Company[3] was among the first to make the experiment. The directors authorized the purchase of a truck and contracted with a truck driver. One-half of the gross income derived from trucking livestock to Cleveland was kept by the truck driver, the balance was applied on payments of the truck, as it was purchased on the installment plan. The truck was paid for in about a year from the income of trucking and was then turned over to the trucker. This organization merely assumed responsibility for purchasing.

Holmes County Service Company in 1928 purchased a new ton truck with a livestock rack for $710 and commenced trucking to

[3]County service companies in Ohio are the organizations which were incorporated by the Farm Bureau for commercial activities. These include purchasing of farm supplies and, in a number of counties, the cooperative marketing of livestock.

Cleveland, a distance of 75 miles. At the end of nine months this organization collected an income of $3,491 and expended $2,566, leaving a net gain of $925. Thus they had paid for their truck and had $215 left. During April, 1929, the volume had increased to such an extent that they purchased a three ton truck. The light truck was then used only to collect calves and small consignments of livestock, which were reloaded to the large truck to make the trip to Cleveland. The rates charged for trucking were, hogs and cattle 60 cents per hundredweight and sheep and calves 70 cents. In case a farmer had 2,000 pounds or more of hogs the rate was reduced to 50 cents. No reduction was made for the other species.

At the time of this study Ashland County Service Company and The Boughtonville Farmers Elevator were operating trucks on similar plans with some variations. These companies have not trucked for long enough periods to prove definitely the benefits of such procedure by cooperative organizations, altho the early results indicate further development with good assurance of success.

LENGTH OF HAUL OF LIVESTOCK TRANSPORTED BY TRUCK

Ohio livestock was trucked greater distances in 1928 than in preceding years. The truck was used more by the livestock farmer, not only in the vicinity of the terminal market but in other sections as well.

In order to determine the distance livestock has been trucked the receipts arriving by truck at Cleveland and Cincinnati for the month of October for the years 1922, 1927, and 1928 were analyzed by ten-mile zones, Tables 7 and 8.

A very small percentage of the livestock was received from a distance greater than 80 miles. More hogs than any other species were received at Cleveland from points beyond 80 miles, altho sheep were a close second. A larger percentage of the truck receipts at Cleveland than at Cincinnati were hauled more than 80 miles.

While much has been said about livestock trucked more than 100 miles, a very small volume had come more than 80 miles either to Cleveland or Cincinnati previous to 1929. The big percentage of truck receipts originated between 20 and 60 miles from Cleveland or Cincinnati. The numbers received from the 50 to 70-mile zones have shown exceptional growth.

The numbers of calves and cattle hauled more than 70 miles have not shown very great increases, but hogs and sheep, especially at Cleveland, were being trucked in increasing numbers for

TABLE 7.—The Number and Percentage of Livestock Trucked to Cleveland by Zones of Ten Miles for the Month of October in 1922, 1927, and 1928

Miles from Cleveland	Cattle			Calves			Hogs			Sheep		
	1922	1927	1928	1922	1927	1928	1922	1927	1928	1922	1927	1928
	Number received											
Under 10	51	27	104	30	31	124	20	12	95	9	44	45
10—19	179	148	200	147	129	132	178	202	230	119	229	276
20—29	164	310	337	183	260	272	389	176	357	293	438	507
30—39	151	505	745	458	700	817	631	1,042	1,358	1,104	2,091	2,557
40—49	41	228	631	277	556	763	1,046	1,162	1,169	1,508	2,761	3,076
50—59	12	210	509	25	292	684	504	1,687	2,005	772	3,554	2,962
60—69	3	86	279	32	212	803	61	1,388	3,268	169	2,277	3,146
70—79	19	25	54	0	66	115	9	362	963	0	687	1,460
80—over	4	18	24	15	29	102	19	103	695	61	375	647
Total	624	1,557	2,883	1,167	2,275	3,812	2,857	6,134	10,140	4,035	12,456	14,676
	Percentage received											
Under 10	8.2	1.7	3.6	2.5	1.5	3.2	0.7	0.3	0.9	0.2	0.4	0.3
10—19	28.7	9.5	6.9	12.5	5.7	3.5	6.2	3.4	2.3	2.9	1 8	1.9
20—29	26.3	19.9	11.7	15.6	11.4	7.1	13.2	3.0	3.5	7.3	3.5	3.5
30—39	24.2	32.4	25.8	39.2	30.8	21.4	22.2	17.0	13.4	27.3	16.8	17.4
40—49	6 6	14.6	21.9	23.6	24.4	20.0	36.6	18.9	11.5	37.4	22.1	20.9
50—59	1.9	13.5	17.7	2.1	12.8	17.9	17.6	27.5	19.8	19.2	28.5	20.3
60—69	.5	5.5	9.8	2.7	9.3	21.1	2.1	22.2	32.2	4.2	18.4	21.4
70—79	3.0	1.6	1.8	.5	2.9	3.0	.3	5.9	9.5	0	5.5	9.9
80—over	.6	1.3	.8	1.3	1.2	2.8	.7	1.8	6.9	1.5	3.0	4.4
Total	100	100	100	100	100	100	100	100	100	100	100	100

TABLE 8.—The Number and Percentage of Livestock Trucked to Cincinnati by Zones of Ten Miles for the Month of October in 1922, 1927, and 1928

Miles from Cincinnati	Cattle			Calves			Hogs			Sheep		
	1922	1927	1928	1922	1927	1928	1922	1927	1928	1922	1927	1928
	Number received											
Under 10	1,184	445	572	1,598	436	734	782	960	1,839	220	113	282
10—19	297	376	545	305	232	578	2,175	1,239	1,801	298	272	598
20—29	513	583	1,120	744	604	1,593	9,015	4,240	10,704	889	1,412	2,242
30—39	231	266	832	349	235	804	3,736	3,734	8,232	703	1,135	3,082
40—49	213	257	781	430	253	838	8,622	7,223	13,936	564	1,105	2,051
50—59	93	104	402	234	125	348	4,309	3,447	9,083	245	436	575
60—69	14	102	285	41	51	199	507	814	3,812	121	168	398
70—79	29	27	11	41	.....	19	94	19	156	5	.....	63
80—89	3	0	0	18	2	3	57	.....	2	22	.....	1
90—99	1	3	0	0	12	53	.....	.....	.....	.....	.....	.....
100—over	0	13	37	0	15	87	.....	10	107	.....	5	40
Total	2,578	2,176	4,585	3,760	1,965	5,256	29,297	21,686	49,672	3,067	4,646	9,332
	Percentage received											
Under 10	45.9	20.4	12.5	42.5	22.1	14.0	2.7	4.4	3.7	7.2	2.4	3.0
10—19	11.5	17.3	11.9	8.1	11.7	11.0	7.4	5.7	3.6	9.7	5.9	6.4
20—29	19.9	26.8	24.4	19.8	30.7	30.3	30.8	19.5	21.5	29.0	30.4	24.0
30—39	9.0	12.2	18.2	9.3	12.0	15.3	12.7	17.2	16.6	22.9	24.4	33.0
40—49	8.3	11.8	17.0	11.4	12.9	15.9	29.5	33.3	28.2	18.4	23.8	22.1
50—59	3.6	4.8	8.8	6.2	6.4	6.6	14.7	15.9	18.3	8.0	9.4	6.3
60—69	.5	4.7	6.2	1.1	2.6	3.8	1.7	3.8	7.7	3.9	3.6	4.4
70—79	1.1	1.3	.2	1.1	.....	.4	.3	.1	.3	.2	.....	.7
80—89	.1	.....	.....	.5	.1	.1	.2	.....	.....	.7	.....	.....
90—99	.1	.1	.....	.....	.6	1.0	.....	.....	.....	.....	.....	.....
100—over	.....	.6	.8	.....	.9	1.6	.....	.1	.1	.....	.1	.1
Total	100	100	100	100	100	100	100	100	100	100	100	100

distances greater than 70 miles. This was especially noticeable for the year 1928. This condition was not so striking in the Cincinnati territory.

The shift from railroad to truck has been greatest in the territory within 60 miles of Cleveland and Cincinnati. At the conclusion of this study many agencies marketing livestock in the Cleveland area were extending the zone beyond 60 miles and were shifting to the truck for transportation. This was not noticeable to such a degree in the Cincinnati territory.

The length of haul for trucked livestock was shorter in the territory other than at Cleveland and Cincinnati. The tendency was to concentrate at railroad shipping points and other places of disposal. This was shown by the reports of 101 farmers in the southwestern Ohio territory. These farmers were located in 47 townships, which normally did not truck to Cincinnati but disposed of their livestock at other points. In analyzing the returns furnished by these 101 farmers it was found that 78 percent of their livestock was trucked less than 20 miles, 17 percent between 20 and 40 miles, and only 5 percent more than 40 miles. This shows that at the conclusion of the study livestock was being trucked shorter distances in the territory which normally does not truck to the terminal markets at Cleveland and Cincinnati.

SOURCE OF TRUCK RECEIPTS AT CLEVELAND AND CINCINNATI

Nearly all the livestock received by truck at Cleveland came from Ohio, altho a few truck shipments were received from Pennsylvania. This was not the case at Cincinnati, Table 9. Even tho trucked livestock was received from three states, Ohio furnished the largest amount, 53.8 percent of the cattle, 53.8 percent of the calves, 65.9 percent of the hogs, and 35.5 percent of the sheep and lambs. Ohio was exceeded in the number of sheep by Kentucky, which furnished 52.4 percent of the total. Indiana furnished the smallest percentage of cattle, calves, and sheep of the three states, but ranked second to Ohio in the number of hogs.

During the year 1928 Kentucky furnished the Cincinnati market more cattle, calves, hogs, and sheep from the zone of 100 or more miles than the other two states. This, in a large measure, was due to the fact that in the other states competition from other markets was encountered, such as Indianapolis, Indiana, and to the local markets in Ohio, such as Dayton, Springfield, and other concentration yards.

TABLE 9.—The Number and Percentage of Livestock Received at Cincinnati by Truck From Ohio, Kentucky, and Indiana by Zones of Ten Miles for the Year 1928

Miles from Cincinnati	Cattle				Calves				Hogs				Sheep			
	Ohio	Kentucky	Indiana	Total	Ohio	Kentucky	Indiana	Total	Ohio	Kentucky	Indiana	Total	Ohio	Kentucky	Indiana	Total
Number received																
Under 10	6,053	1,731	.....	7,784	7,608	1,290	.....	8,898	15,838	5,167	.....	21,005	1,722	541	.....	2,263
10—19	2,574	2,229	.....	4,803	3,214	2,536	.....	5,750	15,825	4,943	.....	20,768	2,340	5,657	.....	7,997
20—29	4,832	3,334	1,731	9,897	8,165	4,358	3,838	16,361	77,788	8,730	8,393	94,911	8,464	16,879	1,946	27,289
30—39	2,957	2,204	968	6,129	4,916	2,985	1,937	9,838	55,941	6,212	8,135	70,288	7,401	18,971	931	27,303
40—49	3,457	1,409	1,978	6,844	5,996	2,545	3,013	11,554	97,963	2,156	35,242	135,361	8,029	6,305	3,124	17,458
50—59	1,403	131	2,115	3,649	1,597	60	2,534	4,191	35,700	350	54,180	90,230	2,872	211	3,141	6,224
60—60	953	64	1,009	2,026	1,191	139	1,324	2,654	6,352	322	24,516	31,190	1,785	113	2,172	4,070
70—79	123	61	57	241	62	225	38	325	597	269	418	1,284	506	26	36	568
80—89	27	19	8	54	35	34	26	95	23	15	111	149	.....	65	.....	65
90—99	54	7	.....	61	35	201	.....	236	26	34	.....	60	122	.....	.....	122
100—over	37	187	19	243	14	1,065	39	1,118	81	514	450	1,045	216	656	20	892
Total	22,470	11,376	7,885	41,731	32,833	15,438	12,749	61,020	306,134	28,712	131,445	466,291	33,457	49,424	11,370	94,251
Percentage received																
Under 10	77.8	22.2	.....	100	85.5	14.5	.....	100	75.4	24.6	.....	100	76.1	23.9	.....	100
10—19	53.6	46.4	.....	100	55.9	44.1	.....	100	76.2	23.8	.....	100	29.3	70.7	.....	100
20—29	48.8	33.7	17.5	100	49.9	26.6	23.5	100	82.0	9.2	8.8	100	31.0	61.9	7.1	100
30—39	48.2	36.0	15.8	100	50.0	30.3	19.7	100	79.6	8.8	11.6	100	27.1	69.5	3.4	100
40—49	50.5	20.6	28.9	100	51.9	22.0	26.1	100	72.4	1.6	26.0	100	46.0	36.1	17.9	100
50—59	38.4	3.6	58.0	100	38.1	1.4	60.5	100	39.6	.4	60.0	100	46.1	3.4	50.5	100
60—69	47.0	3.2	49.8	100	44.9	5.2	49.9	100	20.4	1.0	78.6	100	43.9	2.8	53.3	100
70—79	51.0	25.3	23.7	100	19.1	69.2	11.7	100	46.5	20.9	32.6	100	89.1	4.6	6.3	100
80—89	50.0	35.2	14.8	100	36.8	35.8	27.4	100	15.4	10.1	74.5	100	.....	100.0	.....	100
90—99	88.5	11.5	.....	100	14.8	85.2	.....	100	43.3	56.7	.....	100	100.0	.....	.....	100
100—over	15.2	77.0	7.8	100	1.3	95.3	3.4	100	7.8	49.2	43.0	100	24.2	73.5	2.3	100
Total	53.8	27.3	18.9	100	53.8	25.3	20.9	100	65.7	6.1	28.2	100	35.5	52.4	12.1	100

In the two zones, 50 to 59 and 60 to 69 miles, Indiana furnished more livestock than either Ohio or Kentucky. The percentage was uniformly higher for all four species. It was only at this distance that Indiana ranked consistently ahead of the other two states. Very little Indiana territory is nearer than 40 miles to Cincinnati, which explains why Indiana furnished comparatively less livestock by truck under 50 miles.

When the records of truck receipts at Cleveland were sorted by counties, it was found that eleven counties furnished livestock in 1928 that did not furnish any in 1922. These counties for 1928 contributed 13.9 percent of the cattle, 15.1 percent of the calves, 37.7 percent of the hogs, and 23.4 percent of the sheep received by truck. At Cincinnati five more counties from Ohio contributed livestock by truck in 1928 than in 1922. The truck receipts from these five counties in 1928 were 19.3 percent of the cattle, 9.4 percent of the calves, 10.4 percent of the hogs, and 15.0 percent of the sheep. Six additional Indiana counties and nineteen additional Kentucky counties furnished livestock by truck to Cincinnati in 1928, as compared to six years earlier. These receipts show how the truck area has grown at Cleveland and Cincinnati.

RATES PAID BY LIVESTOCK PRODUCERS FOR TRUCKING LIVESTOCK

In the previous section it was shown that livestock was being trucked long distances to our terminal markets, and that the tendency was for the truck to transport it even greater distances. With such developments it is interesting to compare the rates charged by truckers and by railroads for moving livestock over these distances.

The rates charged for transporting livestock by railroads within Ohio for varying distances are given in Table 10. The railroad rates were increased every ten miles varying from 0.5 cent to 1.5 cents per hundredweight, and were highest on lambs and sheep in single deck cars, and lowest on hogs, calves, and lambs in double deck cars. The same rate also held for cattle in single decks, as no cattle are shipped in double decks.

More hogs were trucked than of the other species and the rates charged for trucking hogs were more often on a hundred-weight rather than a per-head basis, which was not uniformly true for cattle, calves, and sheep. Hog rates by truck, therefore, are compared more easily with rates by railroad. The truck rates on hogs

TABLE 10.—Railroad Carload Rates Per Hundredweight for Transporting Livestock in the State of Ohio During the Year 1929

Miles transported	Cattle (single deck) and hogs, calves, sheep, and lambs (double deck)	Calves or hogs (single deck)	Lambs and sheep (single deck)
	Cents	*Cents*	*Cents*
1—10	10.5	12.0	13.0
11—20	11.0	12.5	14.0
21—30	12.0	14.0	15.0
31—40	13.0	15.0	16.5
41—50	13.5	15.5	17.0
51—60	14.0	16.0	17.5
61—70	15.0	17.5	19.0
71—80	16.0	18.5	20.0
81—90	16.5	19.0	20.5

to Cincinnati and Cleveland are given in Table 11. These rates[4] were secured on a group of truck loads taken at these two markets.

The Cleveland rates were from 10 to 25 cents per hundredweight higher than the Cincinnati rates. There was another rather significant point brought out in that the rates at Cincinnati were just as high for the nearby territory as for longer distances. This situation held to some extent for the Cleveland territory.

TABLE 11.—Rates Per Hundredweight for Trucking Hogs to Cincinnati and Cleveland During the First Three Months of 1929

Miles	Cincinnati			Cleveland		
	Rates per cwt.		Truck loads	Rates per cwt.		Truck loads
	Range	Average		Range	Average	
	Cents	*Cents*	*No.*	*Cents*	*Cents*	*No.*
0—25	16—50	39	34	40— 60	52	4
26—50	25—50	35	46	40— 76	55	26
51—up	30—52	38	23	40—100	64	27

At both Cleveland and Cincinnati the rates charged were greater than the railroad rates. However, in order to make a fair comparison between rail and truck rates, additional charges must be added to the livestock delivered by rail; for the truck picks the livestock up at the farm and delivers it to the stockyard, whereas that delivered by railroad must be taken from the farm to the railroad shipping point, usually by truck, unloaded, weighed, and yarded, and the railroad car must be bedded, in many cases partitioned, and then the livestock loaded and billed out to a commission firm at the terminal stockyard. Regardless of whether

[4]Truckers of livestock were reluctant to give out rates charged, but those that are presented were taken from account sales and represent charges on specific loads trucked.

this is done by the livestock producer, buyer, or a cooperative shipping association manager, these additional services should be included for comparison. This service will cost from 15 or 20 cents to 35 cents or more per hundredweight. A railroad rate between 40 and 50 miles of 13.5 to 15.5 cents per hundredweight added to the rates for local services, makes the total rate vary from 28 or 35 cents to 48 cents or more per hundredweight. The latter figure includes the services for trucking livestock from the farm to a terminal market. Comparing the amount of 30 to 50 cents for delivering livestock from the farm to market by rail with livestock trucked the entire distance from the 40 to 50 mile zone, the difference between truck and rail was not great at Cincinnati. At Cleveland the truck rates averaged higher and the difference between truck and rail was greater than at Cincinnati.

The truck offers the livestock producer a better service than rail, which will be brought out later in the discussion. These additional services apparently were of enough value to the producer to be reflected to some extent in the rates charged by truckers.

There is another consideration to be noticed in rates for trucking. At Cincinnati, there was a tendency for the rates to be as high for the nearby as for the more distant territory. This was not the case to such a degree at Cleveland. This tendency seemed to indicate that livestock truckers varied their rates according to competition and what the traffic would bear. In the more distant territory, livestock trucking has been a more recent development. In such territory there was a tendency to cut prices to get the business. In addition, many truckers did not keep records and had not had enough experience to know what rates should be charged. With more experience, rates become more standardized.

Of course considerable time was spent by the trucker in loading the livestock on the truck, especially if the load belonged to several farmers. So driving an additional 25 or 30 miles did not mean so much to the trucker when he only made one trip to market any particular day. This would partly justify higher rates per mile for the short haul.

The rates on cattle were charged either on a per-hundredweight, per-head, or per-trip basis. When compared on a per-hundredweight basis with hogs, the rate averaged the same or slightly higher than for hogs. With few exceptions calves were trucked on a per-head basis with $1 as the most common charge, regardless of distance. The rate in a few instances was as high as $2. Invariably when the rate was $1 for one calf, it was $1.50 for

two calves owned by the same farmer. When the calf rates were computed on a per-hundredweight basis they averaged more than double the rates for hogs.

Sheep and lamb rates were charged on a per-head and per-hundredweight basis. The rates for trucking sheep and lambs when computed on a per-hundredweight basis and compared with hogs, averaged from the same price to about 15 cents more for the same distance.

Returns to a questionnaire were received from the most important livestock producing counties either outside of the trucking area of Cleveland or Cincinnati or just on the border. The rates charged for trucking locally within these 47 counties varied greatly. The most common method given was on a loaded mile basis. The other methods followed, in the order of their importance, were by hundredweight, trip, head, and hour. Of the counties which reported trucking rates, 85 percent were on a per-loaded-mile and per-hundredweight basis. The others were charging on per-trip, per-head, or per-hour basis.

In many counties a minimum amount was charged regardless of the rate basis. For example, if a farmer had only a few hogs to be trucked and was nearly a mile from town the trucker would probably charge him $1 or $1.50 regardless of any other basis of trucking rates.

The rates on a per-loaded-mile basis varied from 25 to 50 cents, with an average of 38 cents for the one ton and one and one-half ton trucks; from 35 to 50 cents with an average of 47 cents for the two ton trucks; and from 50 to 75 cents with an average of 60 cents for the trucks over two tons.

It is difficult to make a comparison of the truck rates on a hundredweight basis because the distance traveled was not given. One county cooperative livestock association had a rate of 10 cents per 100 pounds for hogs and 15 cents for sheep anywhere in the county for loads weighing 1,000 pounds or over. Another association charged 20 cents per hundred for 15 to 20 miles. A third association charged 10 cents per hundredweight from 1 to 6 miles, 12 cents from 6 to 9 miles, and 15 cents for more than 9 miles. In addition this association had the following minimum charges: for one calf, sheep, lamb, or hog 75 cents; for two, $1.25; and for three, $1.50. A fourth county association charged 10 cents anywhere in the county, with $1 minimum for each stop. These four county associations illustrate the various methods in effect by counties which had trucking rates based on a hundredweight charge.

In some counties truckers hauled principally on a trip or job basis, depending on distance, roads, and amount to be trucked. This method was less common at the time of this study than a few years previous. In one county a trucker was getting $2 per hour for short distances regardless of the amount trucked.

The tendency was for rates to become more standardized either on a loaded mile or on a hundredweight basis, particularly for hogs, cattle, sheep, and lambs. Calves however, were trucked more uniformly on a per-head basis.

TERMINAL EXPENSES OF MARKETING LIVESTOCK DELIVERED BY RAILROAD AND TRUCK

Truck consignments delivered at terminal markets contained few animals in many instances. This is shown in Tables 12 and 13.

Nearly 40 percent of the cattle and calf consignments were only one animal, and 86 percent of the cattle and 72 percent of the calves were three or fewer to the consignment. There were also many small consignments among hogs and sheep, for 26 percent of the hog consignments and 14 percent of the sheep were in lots of five or less. Large numbers were the exception rather than the rule, except for lambs where nearly one-third of the consignments were in lots of 26 or over.

TABLE 12.—The Number of Cattle and Calves Received Per Consignment at Cleveland by Truck During the Month of October, 1928

Number of head per consignment	Number and percentage of consignments			
	Number		Percentage	
	Cattle	Calves	Cattle	Calves
1	505	422	39.7	37.7
2	390	236	30.6	21.1
3	208	153	16.3	13.7
4	72	71	5.7	6.3
5	28	63	2.2	5.6
6	29	48	2.2	4.4
7	16	27	1.3	2.4
8—over	25	99	2.0	8.8
Total	1,273	1,119	100	100

These smaller lots required proportionally more time and effort on a per-head basis to yard and sell than carload lots received by railroad. Table 14 shows how this fact has affected yardage charges. At Cleveland the yardage charges were from 40 to 52 percent higher on trucked livestock than on livestock arriving by rail, and at Cincinnati from 17 to 33 percent higher. The yardage charges on railroad stock were less at Cincinnati than Cleveland

TABLE 13.—The Number and Percentage of Hogs and Sheep Received Per Consignment at Cleveland by Truck During the Month of October, 1928

Number of head per consignment	Number		Percentage	
	Hogs	Sheep	Hogs	Sheep
1 to 5	222	104	26.3	14.6
6 to 10	196	108	23.3	15.2
11 to 15	181	96	21.5	13.5
16 to 20	113	104	13.4	14.6
21 to 25	65	66	7.7	9.3
26—over	66	234	7.8	32.8
Total	843	712	100	100

for cattle, calves, and hogs, but the same for sheep. Likewise the yardage charges for livestock delivered by truck were less at Cincinnati than Cleveland for all species, Table 14.

The commission charges for trucked and railroad delivered livestock are difficult of comparison because livestock delivered by truck is figured on a head basis, while that delivered by railroad usually on a maximum per-deck basis. The number in a livestock car varied considerably, so only approximate figures can be given. The comparisons are based on straight decks of livestock. Commission rates on mixed decks were practically impossible of fair comparison.

TABLE 14.—The Charges Per Head for Yarding Livestock Received by Railroad and Truck at Cleveland and Cincinnati During the First Six Months of 1929

Species	Cleveland			Cincinnati		
	Railroad	Truck*	Truck higher than railroad	Railroad	Truck*	Truck higher than railroad
	Cts.	*Cts.*	*Pct.*	*Cts.*	*Cts.*	*Pct.*
Cattle	33	50	52	30	35	17
Calves	25	35	40	15	20	33
Hogs	12	18	50	10	12	20
Sheep	8	12	50	8	10	25

*When not fed in yards.

The commission charged for selling cattle arriving by truck at Cincinnati was $1 per head, while the rate for those arriving by railroad varied from a maximum of $1 to 80 cents or lower per head. At Cleveland the charge for trucked cattle was the same as at Cincinnati, $1 per head, with a maximum of $1 to 75 cents or slightly less for rail delivered cattle.

The calf commission charge at Cincinnati for railroad arrivals was 50 cents per head with a maximum of $25 for single decks and

$35 for double decks; for truck arrivals 75 cents for 1 calf and 50 cents each for two or more. The rates at Cleveland were the same for both truck and rail consignments of calves, with a maximum on rail consignments of $15 for single and $22 for a double deck.

At Cincinnati the commission charge for selling trucked hogs varied from 75 cents for one and 50 cents each for 2 to 12 head, with a maximum of $5, to 40 cents each in lots of 13 to 60, with a maximum charge of $15.50. For railroad delivered hogs the commission varied from about 18 to 25 cents per head, depending on the number in the car and whether single or double decks. A maximum charge of $15 for singles and $25 for doubles was in effect for rail receipts. This would make low rates per head when a large number of hogs were in a car. The selling charge at Cleveland was 25 cents for each trucked hog regardless of numbers, and varied ordinarily from 15 to 24 cents per head for rail hogs. A maximum charge of $14 for a single deck and $22 for a double deck would make the per-head rate vary depending on the number per deck.

The commission charge on sheep and lambs which arrived by rail at Cincinnati was 10 to 15 cents per head with a maximum charge of $15 for single and $25 for double decks. When only one sheep or lamb arrived by truck, 75 cents was the cost of selling, two to four head $1, and more than four 25 cents per head with a maximum of $15. At Cleveland the selling rates for rail sheep and lambs were about the same as at Cincinnati with a charge of $14 for single and $22 for double decks. Truck lambs were charged one rate, 20 cents per head, regardless of numbers.

From these rates quoted above it is apparent that the trucked livestock was charged considerably more than that received by rail, especially hogs, sheep, and lambs. It varied from 50 percent more to more than double the amount charged for rail delivered hogs and lambs. With cattle and calves the rates were approximately the same for straight loads. However, in actual practice the rates were less, for railroad calves were mostly delivered in mixed decks and would come under the maximum deck charges.

ATTITUDE OF BUYERS TOWARD TRUCKED LIVESTOCK

The prices received for trucked and rail delivered livestock were difficult of comparison because of the difference in quality, time sold, and several other factors. The price differences, which were noted by observations on the market, usually were due to condition and fill. At the Cincinnati market, Mr. Bliss Bowman[5] wrote:

[5]Market News reporter of the United States Department of Agriculture on the Cincinnati market, in a letter of May 27, 1929.

Insofar as actual prices are concerned, there are little or no differences between those paid for stock delivered by either agency. Some discount is made on individual lots that show excessive 'fills', but such difference is negligible, especially on calves and hogs.

In the sheep house, a three pound dock was charged to all truck deliveries prior to about a year ago when this differential was removed by action of local interests. Since that time it has been hard to determine any discount charged to truck deliveries, but I feel that buyers have and will make some difference in prices between truck delivered and railroad delivered livestock of equal quality, on account of the excessive 'fills' often carried by truck deliveries. This discount will range upwards from 25 cents per cwt., according to the buyer's estimate of the individual lot and the urgency of demand.

Mr. Mason L. Haskell[6] states trucked livestock is purchased just as readily as that received by railroad:

Packers and others who purchase livestock at the Cincinnati market make no discrimination against livestock received by truck over those received by rail. As you know, receipts are light at Cincinnati market at this time and have been so for some considerable time. The buying strength of the market is not very strong, and it would be impossible for the buyers to make discrimination against truck receipts even if they desired to do so.

The same opinion was held by one of the commission men[7] operating on the market for Cincinnati. He writes:

There is no difference, in my opinion, in price paid for trucked-in cattle, calves, and hogs, as compared with livestock received by the railroad. Sometimes a cow will arrive by truck and will be carrying such a fill that it would be impossible to sell her to good advantage, buyers bidding lower than they would, were it not for the fill. This same thing is true, however, if we get our railroad cattle too full.

Up until a year ago, all trucked lambs sold on this market, were docked three pounds per head; sheep five pounds. This dockage was removed last year and trucked lambs are now supposed to sell without a discount. Trucked lambs that are not too full, in other words, that will compare with railroad lambs as to quality and condition, will sell right along with railroad lambs.

On the Cleveland market Mr. C. C. Green[8] reports the following:

Trucked-in livestock often, in fact usually, carries more fill because of having been off feed less time than the ordinary livestock of the same species which has been handled in cars and this as you

[6]The District Supervisor of the Packers and Stockyards Administration on the Cincinnati Market, in a letter of June 13, 1929.

[7]Mr. P. O. Wilson, manager of the Producers Cooperative Commission Association at Cincinnati, in a letter of June 12, 1929

[8]Market News reporter of the United States Department of Agriculture, in a letter of May 25, 1929.

know is one of the prime price determining factors. Buyers constantly are thinking in terms of dressed cost and for that reason bid low on low dressing livestock even tho the animals handled in opposite manners might be known to be identical. It is not at all impossible for sheep and cattle bought at 50 cents reduction to show up more expensive in the carcass. In fact, they frequently do. So in the cattle and lamb branches of the trade discounts which might be estimated at around 25 to 50 cents under ordinary conditions are traceable in many instances directly to fill and in other instances to other conditions. By other conditions one would mean such things as the fact that trucked in offerings usually cannot be obtained in the desired quantities for shipping, for instance where uniformity is desired thruout an entire carload. The timely arrival of livestock on an early morning train rather than on a truck after mid-forenoon is another factor. The buyer who might have bought the stock early is out of the market later and another buyer may take advantage of narrowed demand.

In the swine division a difference of 10 cents per cwt. is about all that has ever been noted in my experience on this market and in many cases truck hogs sell uniformly over extended periods at prices strictly on a level with car hogs, which probably means that they are more expensive in the meat. On days when the market closes dull truck hogs not infrequently, if late in arriving, sell at a discount but on days when demand is broad until the close the fill which truck hogs are known to carry in many instances denote the closing strength.

In the case of calves, trucked in offerings have their advantages and disadvantages. Frequently the prices look lower on paper, due in many cases to a lack of quality as compared with offerings from some sections farther away which deliver to market by railroad. However, trucked in vealers come usually directly "off the cow" and for that reason attract buyers who want their buy to show up well in the carcass. Here again discounts which may look like 50 cents per cwt. in many instances fade away when the basic condition of the livestock and of the market are taken into account.

Mr. Lester C. Jennings[9] believes that fill is the important difference between livestock delivered by rail and truck.

It is my belief that there is no undue discrimination against livestock received by truck at Cleveland, but that at this time all species are sold on their merits. Trucked in calves command a premium at Cleveland over those received by rail. Veal calves are a very perishable product, and the time between the calf's original home to the killing floor is quite important.

On account of so-called freshness, which means not only a bright carcass but a good liver, kidney, and sweetbread, trucked-in calves sell at Cleveland at an average premium thruout the year over car calves of equal quality and fat of perhaps 50 cents per hundred.

[9]The District Superisor of the Packers and Stockyards Administration at Cleveland, in a letter of June 17, 1929.

Calves received in cars dress on an average of possibly two to three points higher than trucked-in calves. Yet this advantage of car calves is overcome by the added freshness of calves coming by truck. Not all of the buyers on this market will give this premium, but there is enough demand for the freshest veal carcasses to make 50 cents per hundred a fair estimate of the premium.

In the case of older cattle the condition is altogether different. Freshness is of less importance and cattle are judged on the basis of dressing percentage. Cattle of equal grade and fill sell alike, whether received by rail or truck. Animals apparently unduly filled are subject to the same discount regardless of how they are delivered to the market. As 1 percent difference on the killing sheet means about 25 cents per hundred in the liveweight value on about an average of the cattle values prevailing at this time, an estimation of the fill along with other features that determine the dressing percentage is the most important task of the salesman and buyer.

Hogs received by truck formerly were discounted about 25 cents per hundred at Cleveland. This was later reduced to 10 to 15 cents, and at this time there is ordinarily no difference in prices paid as against hogs received in cars. Packers report that these prices have been justified by their killing tests. Tests made this year are said to show trucked-in hogs killing about equally well with car hogs. The general opinion on the market is that truck shippers have been educated thru the price discrimination formerly applied against truck hogs coupled with losses in transit of hogs heavily filled before loading, so that they do not find it profitable to fill hogs too heavily before shipping by truck.

Car sheep take a small fill at the market as compared with cattle. Ordinarily sheep coming by truck have not shrunk out in shipment as have car sheep. Consequently there is a price differential against trucked in sheep. There is no fixed discount. It may vary from 25 cents to a dollar or more per hundred. As with cattle, judgment of the animals by appearance is the determining factor. The average discount on truck sheep and lambs would probably be between 50 and 75 cents per hundred. Sheep buyers of experience have also learned the individual traits of certain marked shippers who are able to feed their sheep so that they arrive at the market without having lost their fill, whether shipped by truck or rail. To illustrate the point that the long or short haul by truck may not determine whether or not the fill has been lost, some figures given by a very experienced sheep buyer at Cleveland may be quoted. He refers to two truck loads of lambs hauled 150 miles which dressed only 43 percent. On the same day car lambs of equal grade dressed 48 percent. As each point in dressing percentage on sheep means more interpreted in liveweight value than a point in cattle dressing percentage, such a difference as 5 percent would be very important.

It should be understood that truck stock ordinarily is not fed at the Cleveland Yards, and usually does not have access to water before being sold.

With reference to the Cleveland market the same thought is mentioned by one of the commission firms[10] operating on that market, which is as follows:

> In regard to discounts that might be paid on truck-in live stock it is pretty hard to state a definite figure on a good strong market. Truck hogs will sell at the same price as car hogs. On a dull market a 10 cent discount is not infrequent. It is pretty safe to say that lambs will sell around 50 cents under car lambs. Truck calves, unless they are unusually full, will sell fully as good as car calves, and occasionally they sell better on account of being fresher and more free from bruising. There are very few steers trucked to the market. I would say that these generally sell steady, but if they are unusually full will sell at around a 25 cent discount.
>
> There is not much difference between car and truck cows, unless conditions are as described in connection with the steers.

It would seem from these statements that condition and fill influenced buyers most on truck and railroad delivered livestock. While trucked animals may be discounted slightly, the amount is not great and may be lessened more as farmers better understand livestock marketing, and as the volume of trucked livestock increases.

TIME OF ARRIVAL OF LIVESTOCK BY TRUCK AT CLEVELAND

Cleveland was the only market which kept the arrival time on the trucked livestock. The receipts during the month of October include a fair distribution of the four species of livestock and for that reason were used in this analysis. Table 15 gives the per-

TABLE 15.—The Percentage of Livestock Which Arrived by Truck at Cleveland During Different Hours of the Day for the Month of October, 1928

Hour	Cattle	Calves	Hogs	Sheep
Before—8	5.0	5.0	1.6	1.6
8—8.59	13.1	11.8	4.7	4.4
9—9.59	21.8	21.3	16.1	16.2
10—10.59	26.3	23.4	28.0	31.5
11—11.59	14.9	21.3	31.7	29.6
12—12.59	7.3	7.5	11.7	10.2
1—1.59	2.7	6.4	3.0	3.6
2—2.59	3.4	.8	2.5	1.0
3—3.59	1.9	1.9	.5	.8
4 and after	3.6	.6	.2	1.1
Total	100	100	100	100

[10]Mr. A. F. Potter, manager of the Producers Cooperative Commission Association at Cleveland, in a letter of May 27, 1929.

centage of cattle, calves, hogs, and sheep which arrived during each hour of the day. An analysis of the table shows that the three-hour period from 9 to 12 o'clock, was the one when most of the trucked livestock arrived. In fact, of the trucked livestock, 63 percent of the cattle, 66 percent of the calves, 75.8 percent of the hogs, and 77.3 percent of the sheep and lambs arrived at that time. Very little livestock arrived by truck before 8 a. m. or after 4 p. m. Only a small amount arrived after 1 o'clock, as late arrivals usually find an unsatisfactory market or must be held over for sale the following day. Hence, every effort was made to get the livestock unloaded so that it could be sold the same day. From 80 to 90 percent was delivered before noon.

It made little difference in the time of arrival whether the livestock originated nearby or 50 and 60 miles away, altho there was a slight tendency for more livestock to be delivered after 1 p. m. when it originated 60 miles or more from Cleveland.

TRUCKS SERVING AN AREA IN SOUTHWESTERN OHIO

As has been previously discussed this area included 70 townships of which 23 normally trucked to Cincinnati and 47 principally to other points. The number of trucks engaged in livestock trucking and the size of the trucks are given in Table 16.

TABLE 16.—The Number and Size of Trucks Serving Livestock Farmers in 70 Townships in Southwestern Ohio During 1928

Size of truck	Area normally trucking to				Total	
	Cincinnati (23 townships)		Other points (47 townships)			
Tons	*No.*	*Pct.*	*No.*	*Pct.*	*No.*	*Pct*
1	31	29.0	58	33.0	89	31.4
1½	16	15.0	46	26.1	62	21.9
2	29	27.1	41	23.3	70	24.7
2½	11	10.3	12	6.8	23	8.2
3	7	6.5	14	8.0	21	7.4
4 and over	13	12.1	5	2.8	18	6.4
Total	107	100	176	100	283	100
Trucks per township	4.6		3.7		4.0	

A large majority of the trucks were of the ton, ton and a half, and two ton sizes. In fact, more than 70 percent were of the smaller type, and very few were large trucks. In the Cincinnati territory there were, on the average, 4.6 and in the territory away from Cincinnati 3.7 trucks per township doing livestock trucking.

The larger trucks carried more total tonnage than the small and lighter trucks. When compared on a basis of weight rather than number, the truck carrying capacity serving the Cincinnati territory was 43 percent greater than the other area, while on the basis of numbers there were only 25 percent more trucks in the Cincinnati territory, but they were of larger sizes.

It must be remembered that these were regular truckers hauling livestock. In addition many farmers have their own trucks and do some hauling for their neighbors.

WHY NOT DELIVER LIVESTOCK BY WAGON?

Anyone familiar with livestock marketing knows that the wagon is passing out of the picture. The reasons for this change as given by a group of farmers in southwestern Ohio is shown in Table 17.

TABLE 17.—Reasons Given by a Group of Farmers in Southwestern Ohio for Delivering Livestock by Truck Instead of by Wagon

Reason	Area trucking normally to				Total	
	Cincinnati		Other points			
	No.	*Pct.*	*No.*	*Pct.*	*No.*	*Pct.*
Quicker	87	38.2	116	35.0	203	36.3
Less shrink	44	19.3	78	23.6	122	21.8
Cheaper	27	11.8	48	14.5	75	13.4
More convenient	30	13.2	22	6.6	52	9.3
Other reasons	40	17.5	67	20.3	107	19.2
	228	100	331	100	559	100

The fact that the truck is quicker and faster was the reason most often mentioned by this group of farmers. The other important reasons put forth, in their order of importance, were less shrink, cheaper, and more convenient. These four reasons, which are really two, account for around 80 percent of the answers. Among the other reasons given were: paved roads are difficult for the horse to travel on, trucks are safer and more modern, trucks require less labor, livestock can be delivered longer distances and marketed in better condition.

It is at first difficult to understand how cheapness can be an important factor. In the first place, the truck is faster. It took from 5 to 10 hours to deliver a load of livestock by wagon when it can be done by truck in 2 to 4 hours or less. The farmer usually delivered his livestock himself when hauling by wagon, thus taking him from his farm operations, while, on the other hand, a hired trucker often delivers the livestock without the farmer leaving his

farm. Thus, no doubt, there is some saving of time. Then too, there is the general opinion that livestock shrinks less, which also would influence the returns to be derived from delivering by trucks.

The farmer is inconvenienced less when he calls a truck. He doesn't need to worry about getting a 'livestock rack' ready the night before or borrowing one from a neighbor, nor bother about other incidental inconveniences. The trucker when notified is generally equipped to handle the livestock in a quick and convenient manner.

SHRINK ON TRUCKED HOGS

This group of 231 farmers, who answered the question, estimated the average shrink on hogs to various points of marketing. These points are grouped into distances of ten miles and the estimates given in Table 18.

TABLE 18.—The Shrink of Trucked Hogs as Estimated by a Group of Farmers in Southwestern Ohio by Intervals of Ten Miles

(Shrink in pounds per hundredweight)

Miles	Area trucking normally to				Total	
	Cincinnati		Other points			
	Number of reports	Average shrink	Number of reports	Average shrink	Number of reports	Average shrink
0— 9.9	19	1.9	62	1.6	81	1.7
10—19.9	17	2.6	45	2.0	62	2.1
20—29.9	11	3.1	28	2.6	39	2.8
30—39.9	8	2.8	.....	.....	8	2.8
40—49.9	23	2.9	.....	.....	23	2.9
50—over	18	3.4	.....	.....	18	3.4

On the basis of these figures hogs will shrink considerably from the time they leave the farm until delivered over the scales. While these figures are estimates they do give some indication of what might be expected, and they give the opinions of these farmers who are trucking or having their hogs trucked to points of disposal.

PLACES TO WHICH LIVESTOCK WAS TRUCKED FROM AN AREA IN SOUTHWESTERN OHIO

Questionnaires were sent to a group of farmers living in 23 townships which were tributary to the Cincinnati market but were on the outer "edge" and had the choice of other markets as well. These farmers trucked 9,363 hogs, 531 cattle, 396 calves, and 988 sheep and lambs to market in 1928, as shown in Table 19. More

than one-half were trucked to the Cincinnati Stockyards. The rest went to railroad shipping points, packing plants, local slaughterers, butchers, etc.

TABLE 19.—Places of Disposal of Livestock Trucked From a Group of Farmers in Southwestern Ohio

Place of disposal	Area normally trucking to							
	Cincinnati				Other points			
	Cattle	Calves	Hogs	Sheep	Cattle	Calves	Hogs	Sheep
	Number trucked							
Stockyards	272	231	5,967	601	135	201	3,744	795
Railroad shipping points	103	75	1,948	271	338	324	11,227	871
Packing plants	131	66	985	42	138	59	1,020	194
Other places	25	24	463	74	30	49	646	205
Total	531	396	9,363	988	641	633	16,637	2,065
	Percentage trucked							
Stockyards	51.2	58.3	63.8	60.8	21.1	31.7	22.5	38.5
Railroad shipping points	19.4	18.9	20.8	27.4	52.7	51.2	67.5	42.2
Packing plants	24.7	16.7	10.5	4.3	21.5	9.4	6.1	9.4
Other places	4.7	6.1	4.9	7.5	4.7	7.7	3.9	9.9
Total	100	100	100	100	100	100	100	100

Farmers as a group were choosing the places of disposal with some discretion, for not all livestock was going to any particular market. Table 20 summarizes the reasons indicated by this group for disposing of their livestock in a particular manner. As would be expected, the price received was the principal factor, followed by accessibility of the market. These two reasons influenced from 75 to 90 percent of the farmers to dispose of their livestock at the places mentioned in the table.

TABLE 20.—Reasons Given by a Group of Farmers in Southwestern Ohio for Trucking Livestock to Certain Places of Disposal

Reason	Area normally trucking to							
	Cincinnati				Other points			
	Cattle	Calves	Hogs	Sheep	Cattle	Calves	Hogs	Sheep
Prices received	50.0	58.1	54.1	54.3	26.5	24.3	19.9	20.4
Accessibility of market	35.0	32.0	32.7	21.9	33.9	28.2	34.5	34.0
Better manner of marketing	14.8	8.6	11.0	17.4	23.0	19.9	17.5	20.1
Other reasons	.2	1.3	2.2	6.4	16.6	27.6	28.1	25.5
Total	100	100	100	100	100	100	100	100

Farmers living in the remaining 47 townships, but not normally in the trucking area of Cincinnati, were asked the same question. This group disposed of their livestock as indicated by Table 19. Most of this livestock was trucked to railroad shipping points and the stockyards, which included Springfield and Dayton. Next in importance were packing plants, local killers, butchers, etc. In both groups more cattle than animals of the other species were sold by farmers to packers.

Fig. 4.—Points of disposal of livestock trucked from farms of 70 townships in southwestern Ohio

The reasons influencing this group of farmers were different from those of the group nearer Cincinnati. Accessibility of market was the principal reason given, with price as second in importance. The miscellaneous reasons were also significant. The most import-

ant one of these other reasons was the particular location of the respective markets. In reality it should be classed under accessibility of market, the first reason given.

This indicates that livestock will be trucked to those points of disposal which are nearest or most readily accessible to the producer and at the same time offer prices that are as good or better than at other points. This is more clearly shown in Figure 4. One naturally wonders what type of agency can do this hauling most effectively.

At this point it is interesting to see what has happened at railroad shipping points in southwestern Ohio during the last five years. The three most important railroads serving this territory, the Baltimore and Ohio, the New York Central, and the Pennsylvania, furnished the number of carloads of livestock loaded out from shipping points between Columbus and Cincinnati for the years 1923 and 1928. For this five-year period several important facts are brought out in Table 21.

Of the 30 shipping points on the three railroads only 11 (Group I) shipped more livestock during 1928 than during 1923. The remaining 19 showed decreases. This table also shows that the railroads shipped about 20 percent less carloads of livestock in 1928 than in 1923. This was a considerable decrease but when the numbers of hogs, sheep, and beef cattle on hand in these counties on January 1 were compared for the two years, the hogs on farms decreased 18 percent, the sheep 17 percent, and the beef cattle 27 percent. Therefore the decrease in rail shipments was more than proportioned to the decrease of livestock on farms.

The 19 shipping points which have shown a relative decline originated 36.9 percent of the total volume in 1923, but only 16.9 percent in 1928. Thus the 11 major points shipped out 83.1 percent of the carloads in 1928 and only 63.1 percent in 1923.

The location of these 11 points (Fig. 4) and the even distribution over the rail territory between Columbus and Cincinnati show the influence the truck is having on railroad loading points. Livestock is being concentrated and shipped from the logical shipping points, by both cooperative and independent agencies. Along with this tendency to concentrate livestock at few points livestock marketing interests in this territory have been disposing of livestock not only to terminal markets but direct to slaughterers. This has meant grading and sorting the livestock received, into grades demanded by the killers. Such marketing requires a larger volume

and the truck has helped concentrate this volume. The truck has been making for fewer but larger shipping points all over the denser livestock producing sections of Ohio.

TABLE 21.—The Number and Percentage of Carloads of Livestock Shipped From 30 Points, on the Three Principal Railroads in Southwestern Ohio During the Years 1923 and 1928*

	Carloads shipped			
	Number		Percent	
	1923	1928	1923	1928
Group I				
1	1,113	1,127	18.9	23.7
2	661	620	11.2	13.1
3	561	599	9.5	12.6
4	416	472	7.0	9.9
5	280	244	4.7	5.1
6	218	207	3.7	4.4
7	242	196	4.1	4.1
8	9	196	.2	4.1
9	119	159	2.0	3.4
10	47	74	.8	1.6
11	62	51	1.0	1.1
Total	3,728	3,945	63.1	83.1
Group II				
12	829	188	14.0	4.0
13	245	120	4.2	2.5
14	201	115	3.4	2.4
15	196	126	3.3	2.7
Total	1,471	549	24.9	11.6
Group III				
16	151	37	2.6	0.8
17	111	31	1.9	.6
18	85	62	1.4	1.3
19	75	28	1.3	.6
20	57	1	1.0	.0
21	60	11	1.0	.2
22	62	36	1.1	.8
23	43	21	.7	.4
24—30	63	21	1.0	.6
Total	707	248	12.0	5.3
Grand total	5,906	4,742	100	100

*Data secured thru the courtesy of the agricultural agent or livestock agent of the Baltimore and Ohio, New York Central, and Pennsylvania railroads.

GEOGRAPHICAL LOCATION OF LIVESTOCK PRODUCTION AND POINTS OF LIVESTOCK MARKETING

We have seen how trucking has grown and in some sections displaced the wagon and even the railroad as a means of moving livestock, particularly near the terminal markets. Other factors relating to livestock trucking have also been discussed; now let us examine trucking in relation to the livestock producing sections and points of disposal.

Livestock is not evenly distributed over Ohio, except in the case of cattle. This is better shown by Figures 5, 6, and 7. Hogs are produced principally in western and especially southwestern Ohio. This is the important livestock producing section of the State. Approximately four-fifths of the hogs of the entire State are produced west of a line drawn north and south thru the State, and dividing it into two equal parts. There were on January 1, 1929, 2½ million hogs on farms according to estimates of the Federal Agricultural Statistics of Ohio.

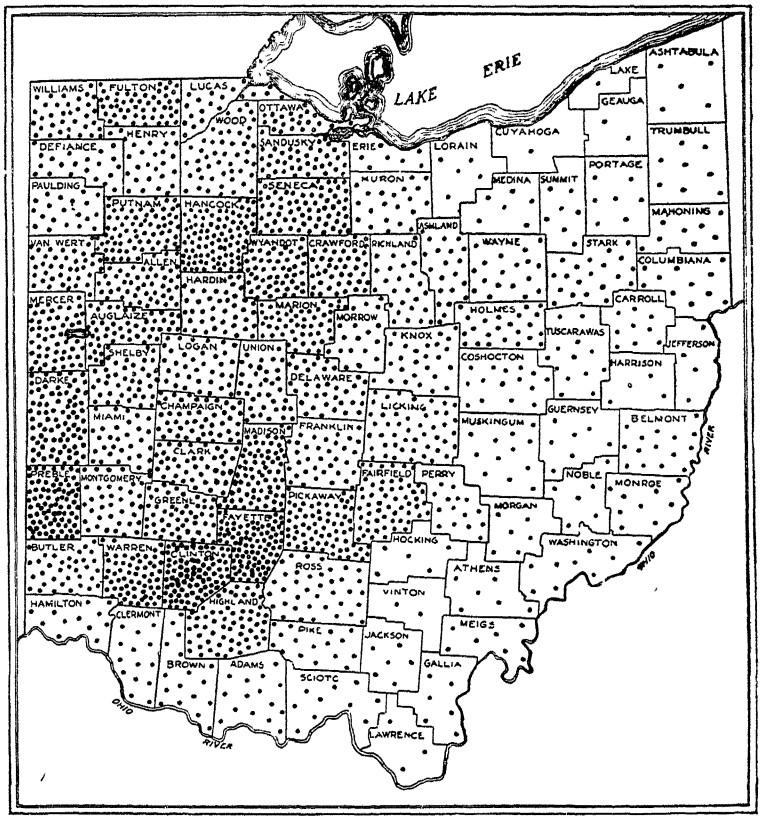

Fig. 5.—Hogs on Ohio farms January 1, 1929

Sheep and lambs are produced in greatest numbers in the north central and southeastern parts of Ohio. The densest sheep population is in a strip of territory extending diagonally across the State from northwest to southeast and including 15 to 20 counties. These counties have around one-half of the total sheep population.

In the western part of the State most of the hogs are located, with the exception of seven or eight counties there are few sheep. The extreme northeastern part of the State likewise has few sheep. This is the dairy cattle region, which supplies Cleveland, Akron, Youngstown, and other cities with fluid milk and hence is not an important section in the production of meat animals. The south central section produces few sheep.

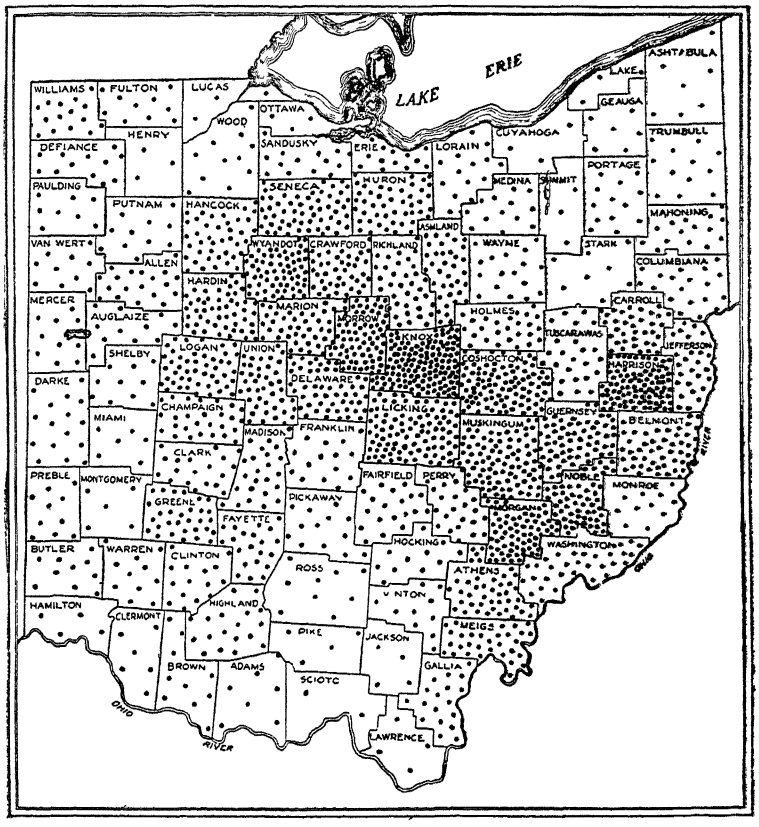

Fig. 6.—Sheep on Ohio farms January 1, 1929

Cattle, including both beef and dairy cattle as shown in Figure 7, are evenly distributed over the State. If dairy cattle alone were shown the greatest numbers would be found in northeastern, northwestern, southwestern, and central Ohio. Beef cattle are found in greatest numbers in southeastern and western Ohio.

Since hogs form an important part of our livestock industry and are located principally in the western part of the State, as we

have seen, it is easier to understand that most of the concentration yards[11] and a number of packers were located in the section shown by Figure 8.

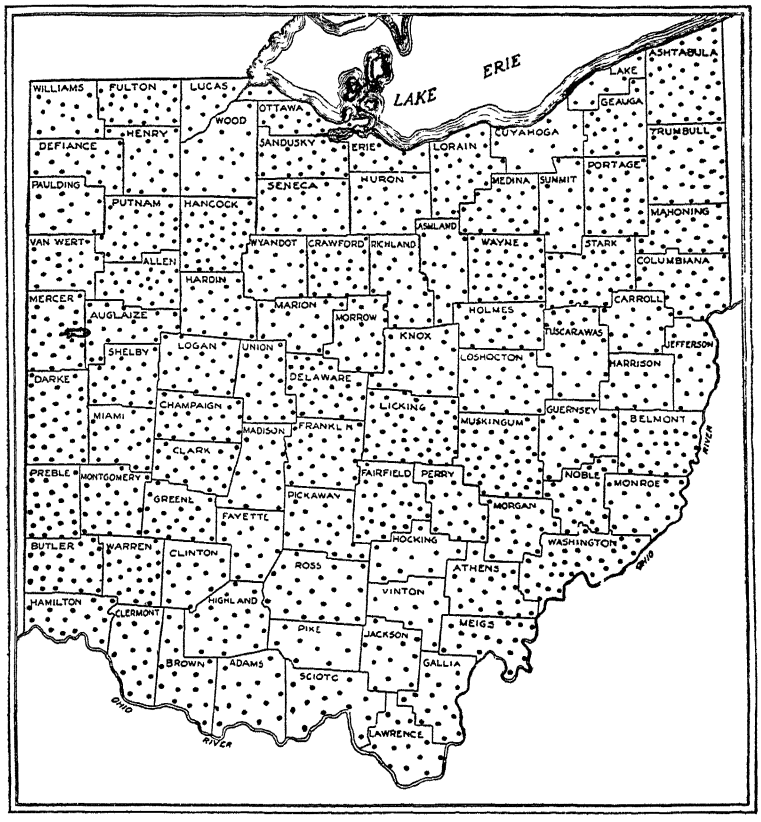

Fig. 7.—All cattle on Ohio farms January 1, 1929

Practically all of the concentration yards, both private and cooperative, were located in the western part of the State along with the denser hog population. It was these points and the packing plants, in addition to the terminal markets at Cincinnati and Cleveland, that received the bulk of the trucked livestock.

In Figure 8 a circle of 15-mile radius has been drawn around the concentration yards and packing plants. For Cleveland and Cincinnati 50 and 75-mile zones have been added. The 75-mile zone from Pittsburgh is also shown for the eastern part of the State. These are map distances, and actual road mileage might

[11]In addition there are a number of railroad points that shipped out livestock, but the volume did not compare with that marketed by the concentration yards.

run slightly more, but using these zones the figure shows that a large part of the livestock population can be trucked to points within a 15-mile radius of the important livestock marketing agencies. If to this area is added the 50 and 75-mile zones around the two terminal markets, Cleveland and Cincinnati, the major livestock producing area in the State is included.

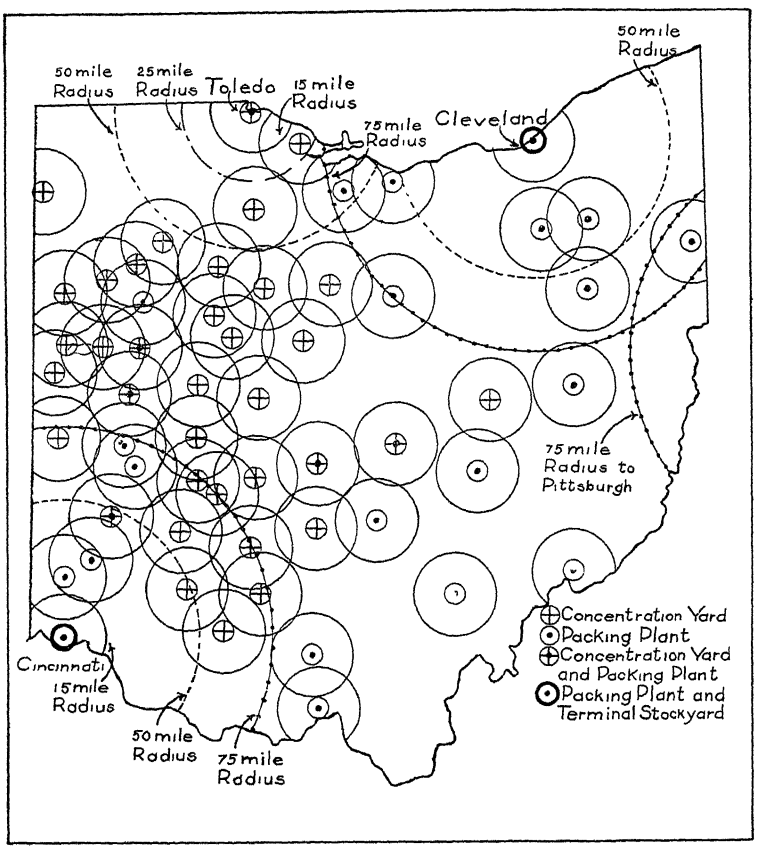

Fig. 8.—The location in Ohio of concentration yards, packing plants or slaughterers, and terminal stockyards, and also showing a trucking radius of 15, 50, and 75 miles from Cincinnati and from Cleveland.

Many market points were so located that a 15-mile radius overlapped that of a competing point, showing the opportunity for farmers to dispose of their livestock to more than one market. In addition, at almost every point there was more than one agency marketing livestock.

TABLE 22.—The Number of Cattle Received by Truck at Seven Markets for a Period of 13 Years

	Buffalo	Chicago	E. St. Louis	Indianapolis	Pittsburgh	Cincinnati	Cleveland
1916	.....	2,739	8,672	.....	.....	21,042	.....
1917	.....	3,622	11,493	.....	.....	27,221	.....
1918	.....	3,332	13,590	.....	.....	28,691	.....
1919	.....	5,248	23,206	47,730	2,623	30,660	3,599
1920	.....	7,213	11,560	48,158	2,577	27,127	5,090
1921	.....	6,917	9,795	45,102	1,998	22,839	3,794
1922	.....	12,624	11,387	51,711	2,574	28,619	6,460
1923	.....	15,767	10,149	57,662	2,606	27,115	9,298
1924	11,889	20,191	9,942	51,523	3,207	28,402	9,780
1925	14,303	35,457	16,854	60,836	4,101	29,863	11,591
1926	13,054	51,848	30,019	66,891	5,698	31,484	15,860
1927	12,711	55,290	37,297	76,513	6,395	33,713	19,395
1928	24,849	71,014	67,420	84,850	9,145	42,636	27,038

TABLE 23.—The Number of Calves Received by Truck at Seven Markets for a Period of 13 Years

	Buffalo	Chicago	E. St. Louis	Indianapolis	Pittsburgh	Cincinnati	Cleveland
1916	.....	922	.....	.....	.....	22,283	.....
1917	.....	2,160	.....	.....	.....	28,355	.....
1918	.....	2,186	.....	.....	.....	31,668	.....
1919	.....	2,711	8,714	62,997	4,169	52,296	7,668
1920	.....	2,042	10,094	76,675	2,521	68,175	12,486
1921	.....	2,587	8,323	74,707	2,561	55,332	11,640
1922	.....	3,769	11,444	74,657	2,846	59,526	13,013
1923	.....	4,462	9,499	79,897	1,770	60,711	19,556
1924	27,834	3,954	11,486	80,650	2,982	55,829	15,814
1925	30,112	6,402	23,839	89,802	4,933	56,522	18,741
1926	26,795	7,585	34,490	93,782	7,021	55,103	21,836
1927	23,460	10,693	46,031	93,081	6,249	52,155	27,409
1928	31,728	23,543	76,011	99,432	10,250	62,020	39,327

TABLE 24.—The Number of Hogs Received by Truck at Seven Markets for a Period of 13 Years

	Buffalo	Chicago	E. St. Louis	Indianapolis	Pittsburgh	Cincinnati	Cleveland
1916		4,398	7,079	173,191		44,923	
1917		3,954	8,097	271,994		77,202	
1918		9,100	12,005	462,313		139,972	
1919		28,095	63,573	711,212	2,346	229,922	18,441
1920		33,108	47,552	787,190	3,201	249,256	24,827
1921		51,091	26,747	808,195	2,132	276,023	20,374
1922		51,838	38,286	734,281	1,684	288,126	27,023
1923		62,203	73,055	934,960	1,307	303,980	27,766
1924	17,540	53,944	92,309	922,904	1,465	287,906	31,354
1925	18,333	68,070	90,622	768,628	1,777	239,109	32,377
1926	15,954	92,487	210,300	745,505	2,721	280,429	51,803
1927	21,980	148,251	227,599	880,678	5,067	367,727	78,885
1928	32,230	304,957	434,436	1,203,934	6,423	471,266	96,939

TABLE 25.—The Number of Sheep Received by Truck at Seven Markets for a Period of 13 Years

	Buffalo	Chicago	E. St. Louis	Indianapolis	Pittsburgh	Cincinnati	Cleveland
1916		296	1,217			10,035	
1917		636	2,545			23,628	
1918		1,336	2,731			30,818	
1919		1,702	9,215	58,658	1,749	50,077	10,190
1920		2,606	5,558	58,698	3,761	62,361	14,963
1921		3,614	9,666	68,201	1,908	64,637	17,266
1922		6,315	20,321	62,818	3,270	64,446	25,279
1923		6,035	16,136	57,052	2,629	53,678	41,944
1924	19,683	9,509	16,576	58,424	4,257	55,151	44,100
1925	29,351	16,485	30,557	67,386	6,039	60,317	49,934
1926	33,458	21,564	47,104	82,995	8,449	62,632	66,680
1927	48,263	39,209	65,695	108,321	10,203	83,359	83,389
1928	64,949	62,521	92,347	119,731	11,661	94,009	88,005

CONCLUSIONS

In the preceding sections the outstanding growth of livestock trucking has been pointed out and some of the factors relating to this method of transportation have been discussed. As a result of this study the following conclusions seem to be warranted.

The truck within the past few years has displaced the wagon to a great degree in moving the livestock from the farm. With its adoption, a tool has been placed in the hands of the farmer which he never had before. During this period, the Market News Service[12] (another instrument of marketing) was greatly developed and placed at the disposal of the livestock producer.

Roads have been improved, the earth road mileage has decreased, and livestock farmers, in greater numbers annually, have been given a farm-to-market road outlet for each of the twelve months of the year. With this development they have been better able to market their livestock at the time and at the place selected.

The most important reasons given by farmers for trucking to a particular place were the accessibility of the market and the prices received. This means the livestock producer markets his livestock where he gets the most for it, other factors considered.

When livestock was hauled to the market by wagon the range of disposal was small. Now with the truck, livestock farmers can truck on past their former point of marketing and in many instances to the terminal market, or to slaughterers.

Thus the local marketing agency must be more efficient than formerly. This is shown by the fact that 19 shipping points on three railroads in southwestern Ohio shipped relatively less livestock in 1928 than five years earlier, while 11 other points not only gained but marketed 80 percent of all the livestock marketed from all the 30 points.

The truck has enabled marketing agencies, cooperative as well as private, by concentrating a larger volume to sort and grade hogs. These agencies have enlarged their operations during the last few years. It has been possible for these concentration yards, due to the more uniform grades, to market hogs to good advantage. In addition many of these private yards (none of the cooperatives) have offered a daily market. That is, a producer may deliver livestock any day and be paid on the day of delivery. With the early market prices broadcasted at 10 a. m., many farmers wait until this

[12]Livestock markets were broadcasted daily over Ohio at the following times: 9:45 a. m. by WEAO, 10:05 a. m. by WSAI, 10:30 a. m. by WLW, 10:35 a. m. by WTAM, 11:00 a. m. by WEAO, 11:30 a. m. by WAIU, 12:20 p. m. by WEAR, 12:30 p. m. by WEAO, 1:15 p. m. by WLW, 4:10 p. m. by WAIU, and 5:30 p. m. by WLW.

first news of the market and then truck their livestock to the point which will net them the most money. Such marketing agencies must be efficient and meet the competition of other agencies, for the truck makes the livestock movement more flexible, and the producer soon finds the better agency with whom to market his product.

As was pointed out from Figure 4, the marketing units which are evolving will concentrate around points depending, it would seem, on the volume to be secured within a radius of 10 to 20 miles. This may vary depending on livestock population, location of terminal stockyards, trucking rates, activity for country purchasing by slaughterers, and some other factors.

Near the terminal markets livestock will be trucked direct to the market. The amount has increased at the important markets each year, and more was trucked in 1928 than any previous year. As far as Ohio is concerned the truck area at Cincinnati seems to have been extended for the present to about the maximum. Not very much livestock from Ohio was trucked to Cincinnati from beyond the 60 to 80-mile zone. At that distance strong competition has been met by the concentration yards. However, should these small yards weaken in their selling ability the Cincinnati truck area may continue to expand.

At Cleveland the situation is somewhat different. Cleveland is not surrounded with as heavy livestock population as is Cincinnati. Figures 5, 6, and 7. Consequently there has not been the development of concentration yards for marketing in the territory near to Cleveland. Within the 75-mile zone there were comparatively few competing agencies. Here it would seem that trucking will continue to expand, for there will be less competition than at Cincinnati.

The question of rates will influence considerably this expansion. As they become more standardized the rate influence will become more constant. At the time of this study the trucking rates were somewhat higher for the Cleveland territory than for Cincinnati.

Livestock has been trucked for a longer period around Cincinnati than around Cleveland. From this it would seem that trucking rates for the Cleveland area may be standardized at slightly lower levels. Any great increase in farmer-owned trucks would be an additional influence to this tendency. All of which would seem to indicate that livestock will probably be trucked greater distances to Cleveland than to Cincinnati. The eventual

outer limits of the Cleveland truck territory are not very apparent at the conclusion of this study, but it does seem that the expansion will continue and be considerable.

The local interior slaughterers will no doubt continue to purchase direct from the livestock producers. Concentration yards and other marketing agencies in such territories will handle the surplus livestock not desired by the slaughterers.

There seems to be a tendency for these interior slaughterers to work in closer cooperation with the concentration yards. This is done by purchasing only the grades desired for killing. The remaining grades are marketed to the best advantage by the concentration yards.

Thus it seems that the truck is giving more flexibility to the movement of livestock and making for stronger, more efficient marketing agencies.